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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,867	04/12/2001	Shunpei Yamazaki	740756-2294	1394
31780 ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165	7590 04/07/2008			
EXAMINER				
LEWIS, MONICA				
ART UNIT		PAPER NUMBER		
2822				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

09/832,867

**Applicant(s)**

YAMAZAKI ET AL.

**Examiner**

MONICA LEWIS

**Art Unit**

2822

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 March 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2, 4-10, 13, 14 and 65-77 is/are pending in the application.  
4a) Of the above claim(s) 65-77 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1, 2, 4-10, 13 and 14 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 12 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/08  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This action is in response to the request for continued examination filed March 20, 2007.

***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/20/07 has been entered.

***Response to Arguments***

3. Applicant's arguments with respect to claims 1, 2, 4-10, 13 and 14 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4-10, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (U.S. Patent No. 6,909,114) in view of Shohara et al. (U.S. Patent No. 6,238,754) and Yamazaki (U.S. Patent No. 5,990,542).

In regards to claim 1, Yamazaki discloses the following:

a) a pixel portion having a n-channel TFT and a light emitting element over a substrate (100) (For Example: See Figure 2B);

b) a channel forming region (121) (For Example: See Figure 2B);

c) an n-type impurity region (124) adjacent to the channel forming region (For Example: See Figure 2B);

d) an n-type impurity region (126) adjacent to the n-type impurity region (124) (For Example: See Figure 2B);

e) an n-type impurity region (122) adjacent to the n-type impurity region (126) (For Example: See Figure 2B);

f) a gate insulating layer (103) provided over the active layer (For Example: See Figure 2B);

g) a gate electrode (108 and 109) provided over the gate insulating layer (For Example: See Figure 2B);

h) a first conductive film (108) provided over the gate insulating layer (For Example: See Figure 2B);

i) a second conductive film (109) provided over the first conductive film, wherein the first conductive film overlaps the channel forming region and the n type impurity region with the gate insulating layer interposed therebetween, and wherein the second conductive film overlaps the channel forming region with the gate insulating layer and the first conductive film interposed between and the second conductive film has a thinner width as compared with the first conductive film (For Example: See Figure 2B);

j) a protecting film (130) in contact with the gate insulating layer and the second conductive film (For Example: See Figure 2C);

k) a resin film (308) provided over the protecting film (For Example: See Figure 12B);

l) the first conductive film comprises one of tantalum nitride and titanium nitride and the second conductive film comprises tungsten (For Example: See Column 6 Lines 38-50); and

m) a pixel electrode (390) on and in contact with the resin film (For Example: See Figure 12B).

In regards to claim 1, Yamazaki fails to disclose the following:

a) a coloring layer provided between the protecting film and the resin film.

However, Shohara et al. ("Shohara") discloses a coloring layer (217) provided between the protecting film (216) and the resin film (230) (For Example: See Figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Yamazaki to include a coloring layer provided between the protecting film and the resin film as disclosed in Shohara because it aids in providing good display characteristics (For Example: See Column 13 Lines 7-35).

Additionally, since Yamazaki and Shohara are both from the same field of endeavor, the purpose disclosed by Shohara would have been recognized in the pertinent art of Yamazaki.

b) at least a part of the resin is in contact with the protecting film.

However, Yamazaki discloses at least a part of the resin (612) is in contact with the protecting film (611) (For Example: See Figure 6E). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Yamazaki to include that at least a part of the resin is in contact with the protecting film as disclosed in Yamazaki because it aids in providing a device with good productivity (For Example: See Column 1 Lines 30-41).

Additionally, since Yamazaki and Yamazaki are both from the same field of endeavor, the purpose disclosed by Yamazaki would have been recognized in the pertinent art of Yamazaki.

In regards to claim 2, Yamazaki discloses the following:

- a) a driver circuit (203 and 204) having a n-channel TFT and a light emitting over a substrate (300) (For Example: See Figure 10);
- b) a pixel portion having a light emitting element over the substrate (For Example: See Figure 12B);
- c) a channel forming region (331) (For Example: See Figure 12B);
- d) a n-type impurity region (335) adjacent to the channel forming region (For Example: See Figure 12B);
- e) a n-type impurity region (337) adjacent to the n-type impurity region (335) (For Example: See Figure 12B);
- f) a n-type impurity region (333) adjacent to the n-type impurity region (337) (For Example: See Figure 12B);
- g) a gate insulating layer (305) provided over the active layer (For Example: See Figure 12B);
- h) a gate electrode (370) provided over the gate insulating layer (For Example: See Figure 12B);
- i) a first conductive film (371) provided over the gate insulating layer (For Example: See Figure 12B);
- j) a second conductive film (109) provided over the first conductive film, wherein the first conductive film overlaps the channel forming region and the n type impurity region with the gate insulating layer interposed therebetween, and wherein the second conductive film overlaps the channel forming region with the gate insulating layer and the first conductive film interposed between and the second conductive film has a thinner width as compared with the first conductive film (For Example: See Figure 12B);
- k) a resin film (308) provided over the protecting film (For Example: See Figure 12B);
- l) a pixel portion having a light emitting element over the substrate (100) (For Example: See Figure 12B); and
- m) a pixel electrode (390) on and in contact with the resin film (For Example: See Figure 12B).

In regards to claim 2, Yamazaki fails to disclose the following:

- a) a coloring layer provided between the protecting film and the resin film.

However, Shohara discloses a coloring layer (217) provided between the protecting film (216) and the resin film (230) (For Example: See Figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Yamazaki to include a coloring layer provided between the protecting film and the resin film as disclosed in Shohara because it aids in providing good display characteristics (For Example: See Column 13 Lines 7-35).

Additionally, since Yamazaki and Shohara are both from the same field of endeavor, the purpose disclosed by Shohara would have been recognized in the pertinent art of Yamazaki.

- b) at least a part of the resin is in contact with the protecting film.

However, Yamazaki discloses at least a part of the resin (612) is in contact with the protecting film (611) (For Example: See Figure 6E). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Yamazaki to include that at least a part of the resin is in contact with the protecting film as disclosed in Yamazaki because it aids in providing a device with good productivity (For Example: See Column 1 Lines 30-41).

Additionally, since Yamazaki and Yamazaki are both from the same field of endeavor, the purpose disclosed by Yamazaki would have been recognized in the pertinent art of Yamazaki.

In regards to claim 4, Yamazaki discloses the following:

- a) the first conductive film comprises one of tantalum nitride and titanium nitride and the second conductive film comprises tungsten (For Example: See Column 6 Lines 38-50).

In regards to claim 5 and 6, Yamazaki discloses the following:

a) the first conductive film comprises tungsten and the second conductive film comprises aluminum (For Example: See Column 6 Lines 38-50).

In regards to claims 7 and 8, Yamazaki discloses the following:

a) the n-type impurity region includes an n-type impurity element in concentrations from  $1 \times 10^{20}$  to  $1 \times 10^{21}$  atoms/cm<sup>3</sup>, the n-type doped region includes an n-type impurity element in concentrations of from  $2 \times 10^{16}$  to  $5 \times 10^{19}$  atoms/cm<sup>3</sup>, and the n-type doped region includes an n-type impurity element in concentrations from  $1 \times 10^{16}$  to  $5 \times 10^{19}$  atoms/cm<sup>3</sup> (For Example: See Column 9 Lines 45-67).

Additionally, the applicant has not established the critical nature of concentrations from  $1 \times 10^{20}$  to  $1 \times 10^{21}$  atoms/cm<sup>3</sup>,  $2 \times 10^{16}$  to  $5 \times 10^{19}$  atoms/cm<sup>3</sup>, and  $1 \times 10^{16}$  to  $5 \times 10^{19}$  atoms/cm<sup>3</sup>. "The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir.1990).

In regards to claims 9 and 10, Yamazaki fails to disclose the following:

a) the gate electrode is covered by a protection film comprising at least one of a silicon nitride film and a silicon oxynitride films.

However, Shohara discloses a semiconductor device where the gate electrode is covered by a protection film comprising at least one of a silicon nitride film and a silicon oxynitride films (For Example: See Column 13 Lines 7-9). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Yamazaki to include a gate electrode covered by a protection film comprising at least one of a



silicon nitride film and a silicon oxynitride films as disclosed in Shohara because it aids in providing good display characteristics (For Example: See Column 13 Lines 7-35).

Additionally, since Yamazaki and Shohara are both from the same field of endeavor, the purpose disclosed by Shohara would have been recognized in the pertinent art of Yamazaki.

In regards to claims 13 and 14, Yamazaki discloses the following:

a) the light emitting device is one selected from the group consisting of an EL display, a video camera, a digital camera, a portable computer, a personal computer, a portable telephone, and a car audio stereo (For Example: See Figure 32A).

In regards to claims 9 and 10, Yamazaki discloses the following:

a) the gate electrode is covered by an insulating film (307) comprising at least one of a silicon nitride film and a silicon oxynitride films are laminated (For Example: See Column 17 Lines 29-32).

#### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONICA LEWIS whose telephone number is 571-272-1838. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular and after final communications.

/Monica Lewis/  
Primary Examiner, Art Unit 2822

April 7, 2008